

**COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR UTILITY PATENT APPLICATION**

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**EXPOSURE CONTROL FOR PHASE SHIFTING  
PHOTOLITHOGRAPHIC MASKS**

the specification of which

XX is attached hereto.  
\_\_\_\_\_ was filed on \_\_\_\_\_ as Application No. \_\_\_\_\_  
\_\_\_\_\_ and was amended on \_\_\_\_\_  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a) which states in relevant part: "Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section....The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98."

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate as indicated below and have also identified below any foreign application for patent or inventor's certificate on this invention having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

\_\_\_\_\_  
(Number) (Country) (Day/Month/Year Filed) Yes No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s), and under §119(e) of any United States provisional application(s), listed below and, insofar as the subject matter

of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulation, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

|   |                                      |  |
|---|--------------------------------------|--|
| <u>60/296,788</u><br>(Application Serial No.) | <u>8 June 2001</u><br>(Filing Date)  | <u>Pending</u><br>(Patented, Pending, Abandoned) |
| <u>60/304,142</u><br>(Application Serial No.) | <u>10 July 2001</u><br>(Filing Date) | <u>Pending</u><br>(Patented, Pending, Abandoned) |

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith, and to file, prosecute and to transact all business in connection with international applications directed to said invention:

|                       |   |                 |
|-----------------------|---|-----------------|
| Mark A. Haynes        | - | Reg. No. 30,846 |
| Ernest J. Beffel, Jr. | - | Reg. No. 43,489 |
| Warren S. Wolfeld     | - | Reg. No. 31,454 |
| James F. Hann         | - | Reg. No. 29,719 |
| Bill Kennedy          | - | Reg. No. 33,407 |
| Kent R. Richardson    | - | Reg. No. 39,443 |
| Erik L. Oliver        | - | Reg. No. 46,296 |

Address all correspondence to:

**CUSTOMER NO. 30437**

Mark A. Haynes  
Haynes Beffel & Wolfeld LLP  
P.O. Box 366  
Half Moon Bay, CA 94019

Direct all telephone calls to Mark A. Haynes at (650) 712-0340.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of **first** joint  
inventor, if any:

Christophe Pierat

Inventor's signature:



Date:

10/4/01

Citizenship:

France

Residence:

420 Riverside Court, #307

Santa Clara, CA 95054

Post Office Address:

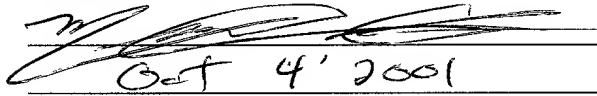
Same as above.

105001-8242650

Full name of **second** joint  
inventor, if any:

Michel Luc Côté

Inventor's signature:



Date:

Oct 4' 2001

Citizenship:

Canada

Residence:

~~3800 Rue Mirassou~~

3327 Provence Ct,

~~San Jose, CA 95148~~

San Jose, CA 95135

apc 10/4/01

apc 10/4/01

Post Office Address:

Same as above.

1002-4-2260

EXPRESS MAIL LABEL: EL685693765US  
DATE MAILED: 5 OCTOBER 2001

Attorney Docket No. NMTI 1002-4

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: )  
CHRISTOPHE PIERRAT et al. ) Group Art Unit: *Unassigned*  
Application No. *Unassigned* ) Examiner: *Unassigned*  
Filed: Herewith )  
For: **Exposure Control for Phase Shifting** )  
**Photolithographic Masks** )

**POWER OF ATTORNEY BY ASSIGNEE TO EXCLUSION OF INVENTOR**  
**UNDER 37 C.F.R. § 3.71 WITH REVOCATION OF PRIOR POWERS**

Commissioner of Patents  
Washington, D.C. 20231

Sir:

The undersigned ASSIGNEE of the entire interest in the above-identified application for letters patent hereby appoints:

|                       |                   |
|-----------------------|-------------------|
| Mark A. Haynes        | - Reg. No. 30,846 |
| Ernest J. Beffel, Jr. | - Reg. No. 43,489 |
| Kent R. Richardson    | - Reg. No. 39,443 |
| Warren S. Wolfeld     | - Reg. No. 31,454 |
| James F. Hann         | - Reg. No. 29,719 |
| Bill Kennedy          | - Reg. No. 33,407 |
| Erik L. Oliver        | - Reg. No. 46,296 |

to prosecute this application and transact all business in the United States Patent and Trademark Office in connection therewith and hereby revokes all prior powers of attorney; said appointment to be to the exclusion of the inventors and the inventors' attorneys in accordance with the provisions of 37 C.F.R. § 3.71.

The following evidentiary documents establish a chain of title from the original owner to the Assignee:

X a copy of an Assignment attached hereto, which Assignment has been (or is herewith) forwarded to the Patent and Trademark Office for recording; or

\_\_\_ the Assignment recorded on \_\_\_\_\_ at reel \_\_\_\_\_, frames \_\_\_\_\_.

Pursuant to 37 C.F.R. § 3.73(b) the undersigned Assignee hereby states that evidentiary documents have been reviewed and hereby certifies that, to the best of ASSIGNEE's knowledge and belief, title is in the identified ASSIGNEE.

Direct all telephone calls to Mark A. Haynes, Esq., at (650) 712-0340.

Address all correspondence to:

**Customer Number 30437**

Mark A. Haynes, Esq.  
HAYNES BEFFEL & WOLFELD LLP  
P.O. Box 366  
Half Moon Bay, CA 94019  
(650) 712-0340 (phone)  
(650) 712-0263 (fax)

ASSIGNEE: NUMERICAL TECHNOLOGIES, INC.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

105004" 03422660

COPY

JOINT TO CORPORATE  
ASSIGNMENT

WHEREAS, the undersigned,

(1) Christophe Pierrat  
420 Riverside Court, #307  
Santa Clara, CA 95054

(2) Michel Luc Côté  
~~3800 Rue Mirassou~~  
~~San Jose, CA 95148~~

3327 Provence Ct.  
San Jose, CA 95135

12/64/01

MC

hereinafter termed "Inventors", have invented certain new and useful improvements in

EXPOSURE CONTROL FOR PHASE SHIFTING PHOTOLITHOGRAPHIC  
MASKS

and have filed an application for a United States patent disclosing and identifying the above invention on \_\_\_\_\_ as Application No. \_\_\_\_\_, OR are filing such an application herewith, and have executed an oath or declaration of inventorship for such application on:

(1) the 4<sup>th</sup> day of October, 2001;

(2) the 4 day of October, 2001;

(hereinafter termed "application"); and

WHEREAS, Numerical Technologies, Inc., a corporation of Delaware, having a place of business at 70 W. Plumeria Drive, San Jose, CA 95134 (hereinafter termed "Assignee"), is desirous of acquiring the entire right, title and interest in and to said application and the invention disclosed therein, and in and to all embodiments of the invention, heretofore conceived, made or discovered jointly or severally by said Inventors (all collectively hereinafter termed "said invention"), and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter termed "patents") thereon granted in the United States and foreign countries.

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Inventors to have been received in full from said Assignee:

1. Said Inventors do hereby sell, assign, transfer and convey unto said Assignee the entire right, title and interest (a) in and to said application and said invention; (b) in and to all rights to apply for foreign patents on said invention pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all applications filed and any and all patents granted on said invention in the United States or any foreign country, including each and every application filed and each and every patent granted on any application which is a divisional, substitution, continuation, or continuation-in-part of any of said applications; and (d) in and to each and every reissue or extensions of any of said patents.


2. Said Inventors hereby jointly and severally covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest herein conveyed in the United States and foreign countries. Such cooperation by said Inventors shall include prompt production of pertinent facts and documents, giving of testimony, execution of petitions, oaths, specifications, declarations or other papers, and other

assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said invention; (d) for filing and prosecuting applications for reissuance of any said patents; (e) for interference or other priority proceedings involving said invention; and (f) for legal proceedings involving said invention and any applications therefor and any patents granted thereon, including without limitation reissues and reexaminations, opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Inventors in providing such cooperation shall be paid for by said Assignee.

3. The terms and covenants of this assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Inventors, their respective heirs, legal representatives and assigns.

4. Said Inventors hereby jointly and severally warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.

IN WITNESS WHEREOF, said Inventors have executed and delivered this instrument to said Assignee as of the dates written below.

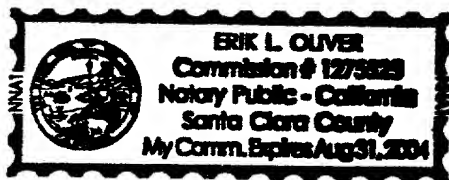
  
\_\_\_\_\_  
Christophe Pierrat

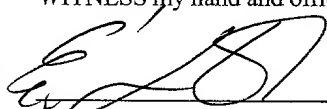
10/4/01  
\_\_\_\_\_  
Date

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ )

On 4 Oct, 2001, before me, Erik L. Oliver, Notary Public  
personally appeared Christophe Pierrat,  
X personally known to me or proved to me on the basis of  
satisfactory evidence, to be the person whose name is subscribed  
to the within instrument and acknowledged to me that he ~~she~~  
executed the same in his ~~her~~ authorized capacity, and that by  
his ~~her~~ signature on the instrument the person or the entity upon  
behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.



  
\_\_\_\_\_  
(Notary Public)

  
Michel Luc Côté

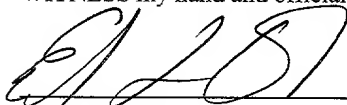
Oct 4 ' 2001  
Date



State of \_\_\_\_\_ )  
County of \_\_\_\_\_ )

On 4 oct, 2001, before me, Erik L. Oliver, Notary Public  
personally appeared Michel Luc Côté,  
X personally known to me or proved to me on the basis of  
satisfactory evidence, to be the person whose name is subscribed  
to the within instrument and acknowledged to me that he ~~she~~  
executed the same in his ~~her~~ authorized capacity, and that by  
his ~~her~~ signature on the instrument the person or the entity upon  
behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

  
(Notary Public)

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